

**WHAT IS CLAIMED IS:**

1. A control system for an internal combustion engine, comprising
  - a throttle valve whose degree of opening is adjustable;
  - a variable valve actuation system that includes an intake valve and enables the degree of opening of the intake valve to be variably changed; and
  - 5 a controller that controls an amount of intake air by changing at least one of an open valve duration of the intake valve and an amount of lift of the intake valve based on a pre-set variable valve control value and by changing the degree of opening of the throttle valve based on a pre-set throttle valve control value in accordance with a state of
  - 10 operation of the engine, wherein
    - the controller is adapted to:
      - if during a specific steady operation state, an actual intake pipe pressure is different from a target intake pipe pressure set during the specific steady operation state, calculate a first correction amount for one of the throttle valve control value and the variable valve control value by changing the one of the throttle valve control value and the variable valve control value so that the actual intake pipe pressure becomes equal to the target intake pipe pressure;
      - 15 if at this time the actual amount of intake air is still different from a target amount of intake air set during the specific steady operation state, calculate a second correction amount for another one of the throttle valve control value and the variable valve control value by changing the another one of the throttle valve control value and the variable valve control value so that the actual amount of intake air becomes equal to the target amount of intake air; and
    - 20 use the second correction amount to further correct the one of the throttle valve control value and the variable valve control value corrected by the first correction amount.

2. The control system according to claim 1, wherein the controller is adapted to update the first correction amount and the second correction amount.

3. The control system according to claim 1, wherein the controller is adapted to,  
5 if the first correction amount is outside a threshold value range or if the second correction amount is outside a threshold value range, determine that the throttle valve or the variable valve actuation system has a fault.

4. The control system according to claim 3, wherein the controller is adapted to,  
10 if the first correction amount is outside a threshold value range or if the second correction amount is outside a threshold value range, correct the degree of opening of the throttle valve or at least one of the open valve duration of the intake valve and the amount of lift of the intake valve with a guard such that the first or second correction amount calculated at this time will not become outside a threshold value range that is  
15 narrower than the threshold value range used for the fault determination.

5. A control method for an internal combustion engine having (i) a throttle valve whose degree of opening is adjustable, and (ii) a variable valve actuation system which includes an intake valve and enables the degree of opening of the intake valve to  
20 be variably changed, where an amount of intake air is controlled by changing at least one of an open valve duration of the intake valve and an amount of lift of the intake valve based on a pre-set variable valve control value and by changing the degree of opening of the throttle valve based on a pre-set throttle valve control value in accordance with a state of operation of the engine, wherein  
25 if during a specific steady operation state, an actual intake pipe pressure is different from a target intake pipe pressure set during the specific steady operation state, a first correction amount for one of the throttle valve control value and the variable

valve control value is calculated by changing the one of the throttle valve control value and the variable valve control value so that the actual intake pipe pressure becomes equal to the target intake pipe pressure;

if at this time the actual amount of intake air is still different from a target amount of intake air set during the specific steady operation state, a second correction amount for another one of the throttle valve control value and the variable valve control value is calculated by changing the another one of the throttle valve control value and the variable valve control value so that the actual amount of intake air becomes equal to the target amount of intake air; and

the second correction amount is used to further correct the one of the throttle valve control value and the variable valve control value corrected by the first correction amount.

6. The control method according to claim 5, wherein the first correction amount  
15 and the second correction amount are updated.

7. The control method according to claim 5, wherein if the first correction amount is outside a threshold value range or if the second correction amount is outside a threshold value range, it is determined that the throttle valve or the variable valve  
20 actuation system has a fault.